Glasgow's Digital Housing Strategy
Glasgow City Council

DRAFT

September 2021

Contents

1. Introduction

Glasgow City Council (GCC) has led the development of a draft Digital Housing Strategy (DHS) for the city in partnership with Registered Social Landlords (RSLs) and other housing partners. The draft DHS outlines priorities that GCC has worked with partners to develop. These priorities are aligned with national and local policies.

The strategy has been developed around 4 digital themes that relate to housing. The themes include:

- Data;
- Digital Inclusion;
- Systems and Services; and
- Technology.

This is Glasgow's first draft DHS and developing the document has provided an opportunity for GCC and partners to identify the current position of digital provision specifically to the 4 identified themes. GCC has carried out a range of engagement activity with partners across the housing sector. The data provided by RSLs, private landlords, Glasgow City Health and Social Care Partnership, GCC Services and other partners has been valuable in shaping this draft strategy.

The strategy sets out ways that digital can be used to improve service delivery and the lives of residents living in the city. Digital services and technology can deliver improvements to services and increase efficiencies, however, a proportion of residents will still require access to traditional methods of communication such as face-to-face/telephone contact. There are also challenges and GCC has included these within this document.

There are a range of benefits associated with implementing digital services and technologies. Such benefits include improving access to housing related services, engaging with tenants and communities through various online platforms and gathering data, which can assist in informing business plans or activity. Improving connectivity is a key theme and addressing barriers to access online services is critical. Feedback from stakeholders shows that there are opportunities for the housing sector to use technology to enhance services, homes and peoples' quality of life.

The principles outlined in the draft strategy are linked to the outcomes outlined in national and local documents including Glasgow's Housing Strategy (2017-2022) and the Digital Glasgow Strategy. During the development of the draft DHS, GCC has recognised the relevant actions outlined in both documents to ensure a consistent approach is adopted going forward.

2. Summary of Glasgow's Draft DHS

2.1 Headlines

Introduction
- GCC has engaged with a range of partners to develop a draft DHS. The strategy has been developed around 4 themes, which are Data, Digital Inclusion, Systems and Services and Technology.
- 47% of RSLs in Glasgow who responded to the digital housing survey, which was issued by GCC during 2020, have a digital/IT strategy in place at present.
- 86% of Scottish Housing Network members feel that the housing sector is behind other sectors when it comes to the provision of digital services/engagement.

Data
- RSLs collect data in various formats. Developing a standardised approach to collecting, storing and analysing data could assist in informing business plans and enhancing services.
- 53% of RSLs advised that they collected data on their tenants' use of digital services.

Digital Inclusion
- Feedback from RSLs indicates that 65% of households living in Glasgow's affordable housing sector have broadband in their homes.
- Affordability, motivation/reluctance and not having the required skills are the main reasons why households do not have broadband in their homes.
- 69% of RSLs in Glasgow offered to lend devices to their tenants.

Systems and Services
- The majority of RSLs in Glasgow offer some services online such as reporting a repair or paying rent. 22% of RSLs have automated functions within their systems.
- 94% of RSLs who responded to the digital housing survey use social media such as Facebook and Twitter to communicate with their tenants.
- The development of an online Common Housing Register for the city would provide a single website for people to register and apply for affordable housing. Such a system has the potential to improve services and data collection and analysis.

Technology
- 72% of RSLs are interested in exploring the use of Internet of Things (IoT) technology in their homes.
- Glasgow City Health and Social Care Partnership (GCHSCP) provides a telecare system to 9,000 people in Glasgow. This supports people to live independently and there are plans to implement a digital system by 2025.
- 50% of RSLs who responded to the digital housing Survey indicated that they are looking to upgrade their housing management system in the future.
- The implementation of Universal Credit (UC) has impacted on the housing sector with increased digital support required to help tenants manage their claims and pay rent on time.

2.2 Challenges

GCC has worked with partners and identified the following challenges associated with improving digital connectivity, systems and services and data across the city's housing sector:

1. Reducing levels of digital exclusion;
2. Enhancing digital Infrastructure;
3. Expanding the provision of digital services;
4. Implementing digital housing technologies;
5. Improving the collection, analysis and display of data through digital platforms; and
6. Providing resources and meeting the costs of delivering improved services and implementing technology.

2.3 Priorities

The draft DHS priorities include:

1. Expanding the range of housing services that are available online;
2. Reducing the number of households living in Glasgow that are digitally excluded;
3. Enhancing the collection, analysis and display of data using digital systems;
4. Delivering effective partnership working to implement digital technology, improve connectivity; and online services that will improve the lives of Glasgow's citizens;
5. Contributing towards reducing levels of deprivation; and
6. Promoting health and wellbeing.

2.4 Actions

The following actions are outlined in the draft DHS:

- Continue to work with partners to reduce levels of digital exclusion through providing training, affordable broadband and/or technology;
- Work with partners to increase fibre broadband connectivity to existing properties and new build homes;
- Develop a Digital Housing Guide that outlines best practice relating to promoting digital inclusion, implementing new systems and online services, new technology and collecting/managing data;
- Develop a Digital Common Housing Register for Glasgow to improve access to housing, data collection and delivery of online services;
- Explore the potential of developing a Digital Housing Data Framework with RSL partners;
- Establish a Digital Housing Working Group;
- Investigate the potential to implement technology that will improve the housing conditions, health of our citizens and deliver services including supporting independent living;
- Expand the provision of online housing services for all RSLs tenants;
- Explore opportunities to secure funding to deliver the actions outlined in the draft DHS Action Plan; and
- Facilitate partnership working that will support RSLs to improve digital systems, services, use of technology and gathering of data.

3. Setting the Scene

3.1 The Importance of Housing and Digital Services

During 2020, Glasgow had an estimated population of 635,640[1] people in 319,284[2] households. The number of households has increased by 6% between 2010 and 2020. Table 1 outlines the split of households by housing tenure in Glasgow.

Table 1 – Glasgow Housing Profile in 2020

Housing Tenure	No. of Households
Social Rent	111,994 (35%)
Private Rent	70,241 (22%)
Owner Occupation	137,059 (43%)
All	319,284

Whilst the draft DHS outlines a range of issues and actions that apply across all housing tenures, GCC recognises the key role and services that RSLs provide for their tenants. This strategy highlights tenue-specific issues including the barriers to accessing online services. The data collected shows this affects a higher proportion of households living in Glasgow's social rented housing stock.

There are 64 RSLs that operate in the city and all provide access to a range of services that support tenants and meet the needs of local communities. During 2019/20, the total net value of RSL housing stock in Glasgow was estimated at circa £3.89 billion[3].

The 2020 Scottish Index of Multiple Deprivation (SIMD 2020) dataset highlights that 29% of the city's population (184,000) live in the 10% most deprived areas of Scotland[4]. In terms of geography, deprivation in Glasgow is closely matched to the neighbourhoods that RSLs operate in.

RSLs sit at the interface of wellbeing and place so working in partnership to maximise opportunities for improving digital services and using technology is vital to tackle the causes of poverty, poor health and inequality. The analysis shows that the majority of RSLs in Glasgow provide digital services. However, there is significant potential to expand digital services and implementation of technology to improve the lives of tenants and assist in the investment of housing stock.

It is estimated that RSLs provide housing and support between 20% to 25% of older people in Glasgow. The opportunities outlined in this strategy could assist in improving existing and developing new services that may benefit elderly citizens, deliver cost savings and contribute towards the delivery of health outcomes.

The importance of having access to a reliable, affordable broadband connection has been demonstrated during the Covid-19 pandemic through the delivery of social, economic, education and health services to people in their homes. A key focus of RSLs during the pandemic was to identify households who did not have access to the internet (through not having the appropriate technology and/or broadband connection) and implement measures to address these barriers.

---

[1] NRS Population Estimates
[2] Glasgow City Council Financial Services
[3] Scottish Housing Regulator Annual Charter Return 19/20
[4] Scottish Index of Multiple Deprivation 2020

3.2 Purpose of the Draft DHS

The purpose of the draft DHS is to outline the opportunities for improving digital services and data analysis, the use of technology and reducing digital exclusion. The strategy sets out how GCC and partners can work together to address the identified challenges and deliver the associated actions.

GCC has developed a draft DHS to:

- Promote the use of digital platforms to improve access to housing and associated services in Glasgow;
- Outline the challenges and benefits that can be achieved from switching to digital platforms;
- Raise awareness of technologies that are available and promote how these can be used to enhance services and the quality of housing;
- Work towards ensuring all of Glasgow's population have an affordable broadband connection in their home and can access online services;
- Improve the collection and analysis of housing data; and
- Showcase good practice examples of digital projects and services delivered by partners.

The draft DHS provides a summary of the challenges and opportunities for the housing sector across the city. GCC will work closely with partners and aims to utilise the draft DHS to facilitate change and make enhancements to online services and increase the use of technology to improve the standard of housing and living conditions for our population.

3.3 Themes

GCC reviewed digital services currently provided and technologies used by RSLs during the development of the draft DHS. The draft DHS has been developed around the following 4 inter-related themes:

- Data;
- Digital Inclusion;
- Systems and Services; and
- Technology.

Data

The data collected from systems and technologies can provide intelligence and outline demand for housing, inform business plans and be used to improve services. Whilst data has been identified as a theme, it does correlate with the themes of systems/services and technology.

GCC relies on housing partners to share data. The data provided informs the development of a range of strategies, investment plans and Council services. GCC is keen to work with our partners to explore if digital platforms can be used to improve the collection, storage and analysis of data. This could benefit the city's housing sector going forward.

Digital Inclusion

It is estimated that approximately 65% of residents living in Glasgow's affordable housing sector have access to the internet in their home. For the purposes of clarity, this strategy defines connectivity as a having access to a broadband connection.

There are range of factors that contribute towards why households living in the city do not have a broadband connection. These include:

- Affordability – Households with lower incomes are less likely to be able to afford to pay for a broadband connection in their home. This relates to all age groups;
- Motivation and Reluctance – Data suggests that older aged households are less likely to have a broadband connection in their home. Research shows that this is due to older people preferring to use traditional forms of communication to socialise and access information/services; and
- Skills – People may not have the appropriate skills or confidence to browse the internet or use devices.

The internet and associated hardware devices are effective tools for reducing the effects of loneliness and isolation. Affordability has been highlighted as a key barrier for many households living in the city's affordable housing sector. Having access to the internet is critical to enable access to online services.

Various online systems provide platforms for people to be able communicate and socialise virtually. The importance of reducing digital exclusion and the role that housing partners have in delivering sustainable communities through increasing access to the internet has been highlighted through the Covid-19 pandemic. For example, RSLs across Glasgow provided households with devices and/or access to the internet during the pandemic to reduce the impacts of social isolation, support learning and facilitate access to Universal Credit/government support.

Systems/Services

Due to the number and scale of RSLs operating in Glasgow, the range of online services offered to tenants varies considerably. All RSLs in Glasgow have a webpage, which provides a platform for offering digital services. The majority of RSLs in Glasgow provide some level of services online with the most popular features being the ability to make a rent payment or report a repair. A detailed analysis of digital services offered by RSLs has been undertaken and has informed the development of the draft DHS.

The draft DHS has considered the role that RSL Information Technology (IT) systems have in supporting the delivery of services to tenants. IT systems provide the functionality that allows RSLs to manage housing, investment programmes, allocations, estate management, rent payments from tenants, repairs and a range of other operations.

There is scope for the housing sector to expand the range of services provided online. GCC recognises the challenges that RSLs experience when implementing and using technology to deliver services. However, GCC is keen to work with the housing sector to expand online services.

GCC recognises that some RSL tenants may not be able to access online services for a variety of reasons. The aim of the strategy is not to encourage RSLs to replace traditional forms of communication and service delivery. It is important that RSLs continue to offer services by telephone and face-to-face contact. This will ensure that all tenants and customers can access services through a range of methods most convenient to their needs.

The benefits of providing online services include:

- Enhanced customer services;
- Reduced costs; and
- Improved operations.

During the development of the draft DHS, GCC considered the following themes relating to systems and services:

- Access to housing;
- Development of online services;
- IT systems; and
- Engagement and use of social media.

Technology

There is a range of technology that is used by housing partners in Glasgow. However, from the analysis undertaken, GCC has identified opportunities for the use of technology in housing to be expanded across the city.

Technology can be used to enable the housing sector to:

- Improve the energy efficiency of housing, reduce fuel poverty and carbon emissions;
- Develop digital services through innovation;
- Enhance housing standards and conditions;
- Support independent living and deliver improvements to health and social care services; and
- Inform business planning.

Technology such as the Internet of Things (IoT) has been implemented in housing stock owned by RSLs in Glasgow. RSLs that specialise in housing and care are using specific technology that assists in supporting tenants with varying needs to receive the support and care they need to live independently.   There is a range of technology available that is effective and supports people to live in their homes. However, such technology requires access to a wireless connection.

The draft DHS outlines a range of considerations and opportunities for expanding the implementation of technology in Glasgow's housing stock.

4. Consultation

4.1 Overview

GCC has consulted with partners through a range of engagement methods to inform the development of the draft DHS. A summary of the engagement undertaken and how data has been gathered is outlined below.

4.2 Consultation Activity

Throughout the development of the draft DHS, GCC has engaged with partners identified as having an interest in housing, increasing digital inclusion, the use of technology, expanding online service provision and improving the gathering/analysis of data. The following methods were used to engage with partners.

RSL Survey

A digital housing survey was developed and issued to all RSLs with housing stock in the city during August 2020. A total of 32 RSLs responded to the survey (49% response rate). The RSLs that responded accounted for 75% of Glasgow's social housing stock.

The survey asked a range of quantitative and qualitative questions and was key in allowing GCC to establish how RSLs in Glasgow were placed in terms of digital services, the use of technology, data and an insight into levels of digital exclusion. Feedback has been used to inform the challenges, set priorities and develop an action plan.

Private Landlord Survey

GCC provided private landlords with an opportunity to respond to a survey. The survey responses were used to inform the draft DHS in relation to improving connectivity and services and investigating the use of technology in the city's private rented sector.

One-to-One Meetings

GCC arranged meetings with internal services and external partners to discuss the identified themes in this document. Meetings were held with the following stakeholders:

- GCC Services – Housing and Regeneration Services (Private Sector Housing and Housing Investment Teams), Digital Economy Glasgow, Strategic Innovation and Technology Team and Financial Inclusion Team (Child Poverty Manager);
- GCHSCP (Older People Planning and Transformation Team);
- Glasgow's Housing, Health and Social Care Group;
- RSLs – Blackwood Homes and Care, North Glasgow Housing Association, Southside Housing Association, Queens Cross Housing Association and Wheatley Group; and
- CENSIS.

Working Groups

GCC has attended the following working groups, which have assisted in gathering data and sharing analysis that has been included in this strategy:

- Internet of Things (IoT) Working Group;
- Scottish Housing Network Digital Working Group; and
- Strategic Business Intelligence Forum.

Feedback received during the consultation period will considered and the strategy will be revised prior to final publication.

5. Policy

5.1 Policy Overview

A review of national and local policy documents that relate to housing and digital has been undertaken by GCC. This review has ensured that the strategy is consistent with both national and local policies and informed the analysis.

5.2 National Policy

Housing to 2040

The Scottish Government published the Housing to 2040 Route Map during March 2021. The document sets out how the Scottish Government plans to take housing policy forward during the next two decades and is underpinned by a range of key principles, which are consistent with Glasgow's draft DHS.

The Housing to 2040 Route Map outlines that digital connectivity is an important driver of economic and social benefits, technology-enabled care, and a key dimension of supporting independent living. The Scottish Government recognises that older adults, those with lower household incomes, adults living in the most deprived areas, disabled people and those living in social rented housing are all less likely to use the internet in Scotland.

The Scottish Government has been able to tackle the digital exclusion of up to 55,000 people on low incomes through the Connecting Scotland programme. Over £45 million has been committed through this programme towards providing devices, broadband connections and data, and training to ensure that people can improve their confidence and are able to experience the benefits of digital.

A summary of the actions that will contribute towards improving housing and digital connectivity are outlined in the Housing to 2040 document. These actions include:

- Delivering new digital connections in new affordable homes (including ready-to-go-internet connections) and considering this within the development of the new Housing Standard;
- Committing £600 million to the Reaching 100% broadband programme. This programme will ensure that every home and business across Scotland will be able to access superfast broadband by the end of 2021. The Scottish Government is also investing to improve mobile coverage by funding new masts in selected rural "notspots" via the £25 Million Scottish 4G Infill Programme;
- The Scottish National Investment Bank is expected to invest in Digital Infrastructure, which is central to the delivery of Housing to 2040; and
- Establishing an inclusive programme of retrofitting affordable homes. This will ensure all planned refurbishment addresses accessibility requirements and that digital connectivity is in place to support technology enabled care and telehealth.

A Changing Nation: How Scotland will Thrive in a Digital World

The Scottish Government published 'A Changing Nation: How Scotland will Thrive in a Digital World' during March 2021. A range of principles are outlined in the strategy and these are applicable to Government, People and Place, and the Economy. The principles are:

- Inclusive, Ethical and User Focussed;
- Digital Leadership and Culture;
- Collaborative;
- Data-Driven;
- Technology-Enabled;
- Innovative and Sustainable;
- A Skilled Digital Workforce; and
- Secure by Design.

These principles have been considered during the development of this strategy and can apply to the range of services delivered by partners in Glasgow. Collaboration between partners and improving the digital skills of our city's workforce will be key in terms of delivering the actions outlined in the draft DHS.

Transformation is required in the way government operates to align processes, which are centred on the user experience and to implement digital thinking as well as digital technology across the public sector. Implementing a fundamental re-design of public services will require a data-driven approach to better understand needs and inform service design. Using data to understand trends can also enable services to become more targeted, proactive and preventative. Service design activities will therefore need to be resourced with appropriate skills and capability and underpinned by technology that enables data to be shared, presented and analysed as appropriate.

Scotland's Digital Health and Care: Enabling, Connecting, Empowering Strategy

Scotland's Digital Health and Care: Enabling, Connecting, Empowering Strategy was published by the Scottish Government in 2018. The document highlights that digital services will play a key role in how care services are delivered across Scotland in the future. Technology will be used to reshape and improve services, support person-centred care and improve outcomes.

The important role that the housing sector plays in health and social care is highlighted in the strategy. Moving forward, RSLs will continue to support and deliver health and social care outcomes whilst implementing digital services and the use of technology.

Implementing digital systems, improving connectivity and encouraging the use of technology are all key and have the potential to assist in the delivery of health and social care services going forward. These will all contribute towards improving services, supporting the development of person-centred care and achieving the outcomes outlined in Scotland's Digital Health and Care Strategy.

5.3 Local Policy

Glasgow's Housing Strategy

Glasgow's Housing Strategy (GHS) sets out the challenges for housing across all tenures in Glasgow and how the Council and its partners will address these over the 5 years between 2017 and 2022. Glasgow's strategic housing priorities are to:

- Promote area regeneration and enable investment in new build housing;
- Manage, maintain and improve the existing housing stock;
- Raise management standards in the private rented sector;
- Tackle fuel poverty, energy inefficiency and climate change;
- Improve access to housing across all tenures; and
- Promote health and wellbeing.

The actions outlined in the draft DHS meet the 6 strategic priorities outlined in the Housing Strategy.

Glasgow's Housing Strategy contains actions that relate to the enhancement of digital services and support health and social care objectives such as maximising opportunities that enable independent living and technology enabled care in Glasgow.

The aims of the Digital Glasgow Strategy are also referenced within Glasgow's Housing Strategy.

Digital Glasgow Strategy

The Digital Glasgow Strategy sets out Glasgow's plans to embrace the opportunities of the digital age and acknowledges the associated challenges.

The aims of the strategy are listed below:

"We want businesses across all of our sectors to realise the potential that digital provides, to stimulate innovation, and to establish Glasgow's tech sector as a top 20 global digital economy"

Actions to deliver this aim are grouped under the following areas:

- Digital Business;
- Digital Skills and Employment;
- Digital Inclusion and Participation; and
- Digital Connectivity.

"We want Glasgow to be recognised as one of the most pioneering and innovative smart cities in the world, and we want to apply this innovation to transforming our public services."

Actions to deliver the aim are grouped under the following areas:

- Digital and Smart Services;
- Digital Community Engagement and Empowerment;
- Digital Leadership; and
- Digital Foundations.

The strategy outlines that access to digital technology can improve quality of life, financial inclusion, health and wellbeing, employability and civic participation. However, there are challenges to delivering these improvements and as previously mentioned, these include access to connectivity and/ or having the appropriate skills to use technology. Being digitally excluded can exacerbate social and economic exclusion and tackling the digital divide is a key priority.

Glasgow's Digital Strategy was reviewed during 2020 to provide a summary of the progress since the document was published including the impact on Glasgow's economy and public services. The review summarises major achievements, notes the challenges and barriers that have been addressed or need further action, notes the impact that the Covid-19 pandemic has had on the implementation of actions and sets out key recommendations going forward.

A key focus going forward is to ensure that Glasgow is recognised as an attractive area to invest in digital infrastructure. CityFibre confirmed Glasgow as a Gigabit City and this programme includes an investment of over £150m, which will be used to provide full fibre to the businesses and citizens of Glasgow. This is the biggest investment to date by the company in any city and will complement the existing investment from GCC to install fibre in all schools and Council premises.

The review highlighted the challenges in the city that exist, particularly in light of the Covid-19 pandemic. However, GCC and partners are continuing to work towards meeting the aims outlined in the strategy.

Glasgow City Council Strategic Plan 2017 – 2022

The Strategic Plan sets out the priorities for GCC, its services and arm's length organisations between 2017 and 2022. The plan is being delivered on a thematic basis across seven cross cutting themes:

- A Thriving Economy;
- A Vibrant City;
- A Healthier City;
- Excellent and Inclusive Education;
- A Sustainable and Low Carbon City;
- Resilient and Empowered Neighbourhoods; and
- A Well Governed City that Listens and Responds.

The Strategic Plan priorities that the draft DHS supports include:

- 1. Deliver the Glasgow Economic Strategy 2016 to 2023 and ensure it is supported by expert external advice from the Glasgow Partnership for Economic Growth;
- 9. Appoint a digital champion and become the number one digital city in Scotland by increasing the number of people with digital skills, growing the business base and greater marketing of our digital success;
- 10. Ensure Glasgow has full superfast broadband by 2021, supported by the Scottish Government's national plan for broadband roll out;
- 38. Support service redesign that will result in Glasgow becoming a healthier, empowered city, with early intervention and prevention approaches at the heart of what we do;
- 66. Improve the efficiency of our services through the development of smart technology, including for refuse collection and street lighting;
- 74. Develop a more integrated approach to how we use our policies, assets and resources to improve community empowerment, neighbourhoods and delivering equality;
- 80. Deliver the Glasgow Housing Strategy, including utilising funding from the Scottish Government and development partners to step up progress on the city's priority Transformational Regeneration Areas and Development Framework Areas.

Recover Rebuild Renew – Glasgow City Region's Economic Recovery Plan in Response to Covid-19

The Recover, Rebuild, Renew Economic Recovery Plan sets out the key actions that the Glasgow City Region partnership will progress to address the economic challenges caused by the Covid-19 pandemic.

This plan highlights the important role that digital has in supporting the Glasgow City Region's economic recovery.   A range of actions outlined in the draft DHS are aligned with the Glasgow City Region's Recovery Plan. The housing sector supports the delivery of the following digital actions that are set out in the Recover, Rebuild, Renew Economic Recovery Plan:

8. To enable businesses to innovate, adapt and become more resilient, City Region partners will work together to provide additional business support with a focus on digital and decarbonisation. This support will complement the existing business support services delivered by local authorities and Scottish Enterprise.

10. Living with Covid has demonstrated that affordable and accessible digital connectivity is more important than ever before. Affordable broadband is a utility that allows residents to access services, training, working from home, and staying in touch with friends and family. Glasgow City Region will develop an action plan that will help our most disconnected residents overcome the barriers – affordability of connection, lack of skills, or lack of interest – that lead to digital exclusion.

6. Analysis

This section outlines the analysis that has been undertaken and informed the development of the draft DHS. The analysis is illustrated under each of the 4 identified digital housing themes.

6.1 Data

Data can be defined as facts, figures or information used to calculate, analyse or plan. The housing sector uses data to inform business plans and design services.

The housing sector captures data in large volumes. However, accessing and analysing data can be challenging. Often, the volume and type of data is complex and resource intensive to analyse. There is scope for RSLs to embrace the benefits of a digital transformation in order to utilise the potential of data.

Since the Covid-19 pandemic, the value and role of good data has been even more critical in informing decision making and planning for RSLs. In response to the digital housing survey, 53% of RSLs advised that they collected data on their tenants' use of digital services through a range of avenues including:

- Tenant customer satisfaction survey;
- Monitoring the use of digital transactions on their webpages/social media pages;
- Monitoring the usage of digital broadband provided by RSLs; and
- Asking tenants if they have access to online services whilst completing welfare phone calls in response to the COVID-19 pandemic.

The analysis shows that data usage and management can be complex and resources intensive. This spans from data collection and analysis through to the utilisation of data to inform and define actions.

Feedback from partners confirms that data is important and used to inform business plans and strategies. It was acknowledged that using forms of digital collection and technology to collect, analyse and illustrate data provides a range of opportunities.

The levels of data collection vary across RSLs. For example, RSLs are working with data scientists to identify opportunities for improved collection and use of data. RSLs also use digital data for a range of activities. These include:

- Measuring the performance of their housing stock and condition;
- Inform locality planning and forecasts; and
- Service delivery including staff resources.

RSLs hold a range of datasets including sensitive data and are compliant with data protection protocols. Whilst acknowledging that there are benefits associated with collecting and analysing data using digital methods, there are concerns relating to privacy and security.

The Housing Associations' Charitable Trust (HACT) prepared a report that outlined how the housing sector could improve the collection and use of data. HACT worked with a range of RSLs and partners across the UK to develop Housing Data Standards. These standards relate to:

- Voids and allocations process;
- Core customer data;
- Reactive repairs;
- Asset maintenance;
- Care and support; and
- Income and service charge collection.

Standardising data allows RSLs to make data-driven decisions and processes. Some of the benefits for RSLs that adopt these standards include:

- Informing business plans;
- Contributing towards identifying the needs of their tenants and communities;
- Gathering consistent and shareable customer data;
- Delivering accurate and timely updates to the customer;
- Achieving greater consistency in tendering projects;
- Achieving consistency across internal teams and contractors;
- More effective compliance;
- Delivering clarity and consistency of void income loss and reporting;
- Making rent statements easier to understand for customers; and
- Easier cost attribution and recovery through service charge.

The Digital Glasgow: 2020 Review outlines actions that underpin the strategy and enable stakeholders to utilise data. Developing a data management system that RSLs could utilise has the potential to:

- Improve transparency;
- Improve decision-making;
- Enable community empowerment;
- Enable automatic entitlement;
- Enable services to become more tailored and proactive; and
- Enable innovation.

GCC has a strategic forum and representatives from various services attend this to discuss opportunities for improved data collection, analysis and data display. A number range of management systems have been developed including an open source platform, which has various levels of user access based on permissions. There is an opportunity for GCC to carry out a review of the housing data that services have access to. The review could be used to identify opportunities for the development of a digital data management system, which could serve all housing tenures in the city and inform service delivery plans.

6.2 Digital Inclusion

Supporting more households to access and use the internet and utilise online services in their homes is a key aim of GCC. Without digital connectivity, households will be unable to consistently access online services or experience the benefits that technology can provide. Connectivity is also required to enable opportunities for data to be collected and subsequently analysed, which informs business planning, policy development, service development and improve housing conditions.

It is also important to understand why people do not use the internet. Key reasons include not having the skills and confidence to access services on the internet, affordability and a reluctance to go online.

The analysis undertaken to develop the draft DHS highlighted that the following groups of citizens are more likely to be digitally excluded:

- Older people;
- Households on lower incomes or who are unemployed;
- People that have disabilities;
- Homeless households; and
- Households that have a lower educational attainment.

There are a range of benefits from being able to access and use the internet. These include:

- Accessing a cheaper retail offering e.g. utility contract;
- Access employment opportunities;
- Enhanced communication methods, particularly through social media platforms;
- Improved health and wellbeing;
- Time savings; and
- Access to a wide range of services (for example housing, health and social care services and welfare benefits through Universal Credit).

Not having access to or being unable to use the internet at home can limit consumer choice. This can result in households paying a higher cost for services and items, hinders access to services and contributes towards social isolation and loneliness.

GCC has analysed the digital housing survey responses from our RSL partners to develop an understanding of internet connection levels of households living in Glasgow's affordable housing sector are to the internet. From the analysis undertaken, 44% of RSLs measure the number of their tenants that have a broadband connection. It is estimated that 65% of RSL households have access to a broadband connection in Glasgow.

In Glasgow, it is estimated that 35% of households (circa 38,500 households) that live in affordable housing do not have access to a broadband connection[5]. There is 98% fibre coverage across the Glasgow city region and the infrastructure continues to expand. However, RSLs cited that age, a lack of skills, confidence, and affordability were the three main reasons why households do not have a home broadband connection.

There may be an unwillingness to access online services from older customers and this can also be coupled with a lack of skills/confidence to transact online. The inability of some households to be able to afford a monthly broadband connection and/or device is also an issue.

---

[5] Digital Housing RSL Survey

RSLs in Glasgow are aware that their tenants perhaps do not have the digital skills to access services online. From the analysis, 69% of RSLs in Glasgow who responded to the digital housing survey offer a range of services to develop the skills and confidence of tenants. These include:

- General computer upskilling;
- Aiding access to online services;
- Developing digital skills to improve employability and financial management; and
- One to-one training by digital champions.

The digital housing survey responses received from RSLs show that 66% of RSLs in Glasgow have device lending schemes in place to help address digital exclusion. GCC and partners provided a range of support to households that were digitally excluded during periods of lockdown, which were implemented due to the Covid-19 pandemic. For example, families were unable to facilitate home schooling due to not having the appropriate access to the internet and/or a device. RSLs supported families by providing tablets and in some cases mobile allowances to support children to learn from home.

GCC has prepared a case study that analysed how RSLs have improved connectivity for their tenants. It found that the most successful approaches involved:

- Ensuring the infrastructure for fibre broadband was in place;
- Offering bespoke digital skills training; and
- Providing free devices and connections for those who could not afford them.

It is estimated that 34% of children in Glasgow are living in poverty[6]. Ensuring that children living in the city's lowest income households have access to the appropriate technology and connectivity has been critical during the Covid-19 pandemic. GCC has provided support to all secondary school age pupils in Glasgow who required access to a device to learn from home. A total of 55,000 iPads were issued to secondary school age pupils. In addition to this, 4,500 Wi-Fi hot spots were also distributed.

Information shared by RSLs supports findings outlined in the Scottish Household Survey (2019). In Scotland, 65% of households with an income of £10,000 per year or less had broadband connection. This is compared with almost all (99%) households with an annual income of £40,000 per year or more having a broadband connection at home. The survey also shows that 99% of people aged 16-24 years old use the internet compared with 43% of those aged 75 years +.

Private Rented Sector

Overall, the private rented sector is well connected, with the Scottish Household Survey finding that 93% of people living in this sector had a home broadband connection. Data supplied by GCC's PRS Housing and Welfare team shows that 48% of households that have received support from the team do not have access to a broadband connection. This highlights why increasing access to affordable broadband in the private rented sector in Glasgow should also be included in this strategy. One of the ways that this could be achieved is by promoting such as BT's 'Home Essentials' broadband scheme, which offers a reduced package for claimants of certain benefits. There may also be scope to work with private landlords and factors to explore reducing digital exclusion in the private rented sector.

---

[6] Glasgow City Council Child Poverty in Glasgow 2020

A survey was issued to private landlords operating in Glasgow to gather data and views on enhancing digital connectivity in the private rented sector. Private landlords were asked whether they would consider opting into a factor-provided community Wi-Fi for a fee. Overall, 48% of respondents advised that they would be interested in exploring such an initiative going forward[7]. There may be scope for factors including RSLs to consider the development of factor provided community Wi-Fi/affordable broadband going forward.

Nesta, the UK's innovation agency for social good, commissioned a demographically representative poll of over 2,000 people in Scotland and Wales during January 2021. The research recognised that the Covid-19 pandemic has exposed a new digital divide of those who have access to broadband/mobile data and those who cannot afford this. For the purpose of Nesta's research, data poverty refers to households or individuals who cannot afford to purchase enough private and secure broadband/mobile to meet their essential needs.

The key findings from this research include:

- **One in seven adults in Scotland and Wales are experiencing data poverty:** Nearly a million adults in Scotland and Wales struggle to afford private and secure access to the internet.
- **Data poverty widens inequalities:** Not going online impedes life chances, increases social isolation, impacts on wellbeing and limits economic opportunities.
- **Connected but compromised: Individuals' and families' needs for data are often not adequately met.** One in ten people with monthly mobile contracts regularly run out of data before the end of the month and larger households struggle to meet very high data needs.
- **Financial and data literacy compounds data poverty:** Only about half of the people we spoke to felt they were able to shop around for the best data deals. People with low digital and financial literacy and weak purchasing power may not realise that better deals are available to them. Our case studies highlight the high costs of exceeding contract allowances.

GCC recognises the issues highlighted in relation to addressing digital exclusion and is committed to working with RSL partners to explore options to increase affordable broadband connections into existing and new affordable housing.

RSLs developing new affordable housing should consider fibre broadband as being the equivalent of a utility service and should be able to demonstrate that any housing proposal has considered and/or taken account of current and future digital services requirements or installation needs. In most circumstances, this is likely to be the provision for future broadband cable connection(s) by ensuring that adequate internal ducting exists for fibre or network cable runs from a logical exterior connection point.

Ducting is a plastic channel that fibre infrastructure can be fed through. Laying free issue ducting at the time of constructing new affordable housing can provide opportunities for increasing the number of fibre providers that households can choose from.

[7] Digital Housing Private Landlord Survey

6.3 Services/Systems

Digital platforms provide opportunities for RSLs to transform how services can be delivered. Replacing traditional systems with a modern and intuitive web-based system can deliver flexibility and service improvements for RSLs and their tenants. The analysis from the digital housing survey responses highlighted that:

- There are 10 housing management systems in use by the 32 RSLs that responded to the survey;
- The average length of time these systems have been in place is 14 years;
- 50% of RSLs indicated that they are looking to change their system in the future; and
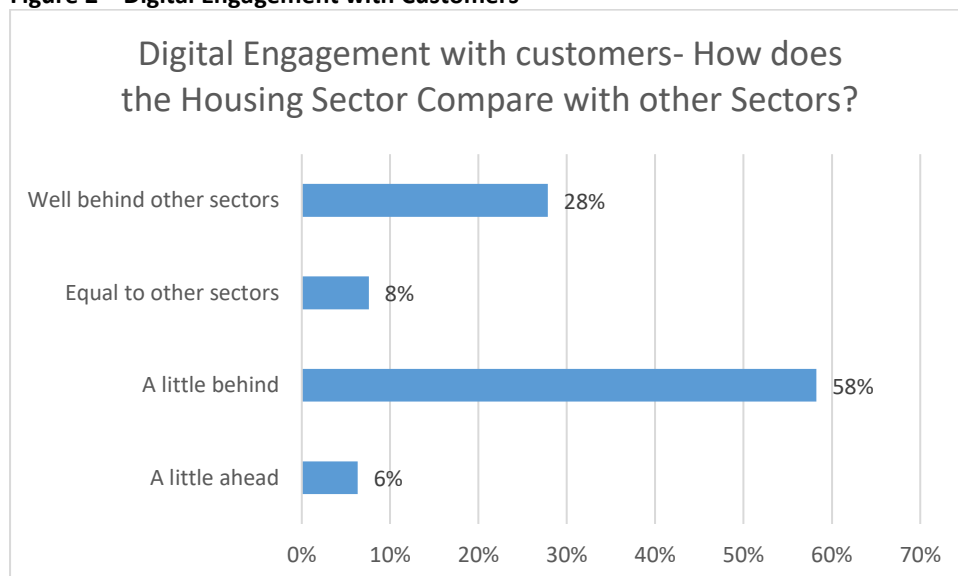- There are limits to the level of online provision that current housing management systems can support.

The majority of RSLs in Glasgow provide access to some online service functionality through their websites. Figure 1 summarises the online services offered by RSLs in Glasgow.

Figure 1 – Online Services Offered by RSLs[5]
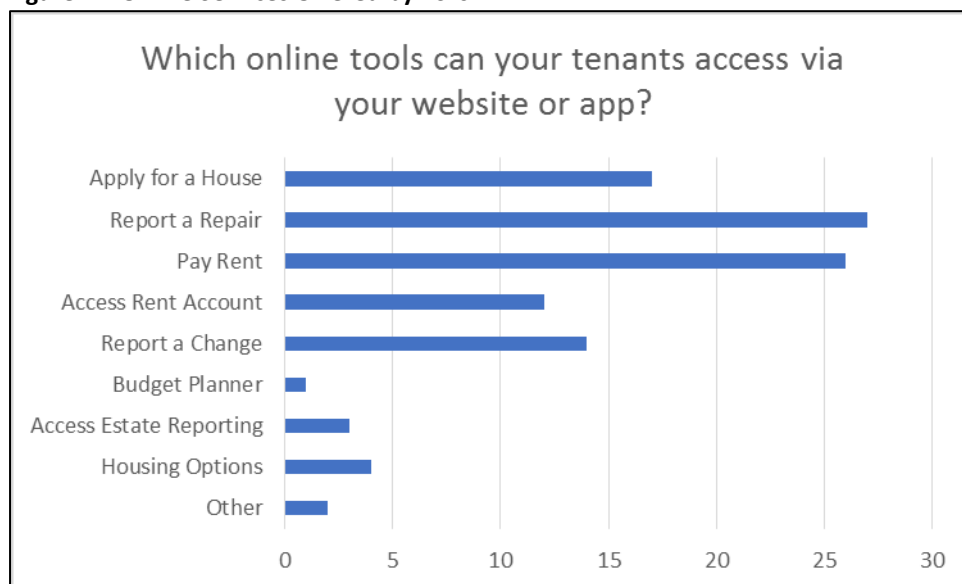
During 2020/21, the Scottish Housing Network issued a survey to members including GCC to develop an understanding of how housing partners used digital platforms to provide services and engage with tenants across the country. The survey was issued to 130 members including Housing Associations/Co-operatives and Local Authorities. A total of 80 members (62% return rate) responded to the survey.

Figure 2 provides a summary of the responses to the Scottish Housing Network survey. Housing partners were asked how the sector compared with others in relation to engaging with their customers through digital platforms. As shown in Figure 2, 86% of responses felt they were a little or a lot behind other sectors. Only 14% of respondents felt the housing sector was ahead or the same as others.

Figure 2 – Digital Engagement with Customers[8]

Digital Engagement with customers- How does the Housing Sector Compare with other Sectors?

Category	Percentage
Well behind other sectors	28%
Equal to other sectors	8%
A little behind	58%
A little ahead	6%

There is scope for RSLs to provide automated services and allow for tenants to transact online, contributing towards improved customer services and effective resource management. A total of 22% of RSLs in Glasgow that responded to the digital housing survey have automated processes in place. The most common process automated by RSLs is reporting a repair.

Wheatley Group launched their MyHousing platform in November 2019. This is a comprehensive end-to-end online resource and is a digital housing application service that allows users to note their interest in properties for social rent. However, it also offers a range of other online services. These services include a bespoke budget planner for each customer. The system develops a personal plan (a self-service account) for each customer and this carries between each service. It also links to external services such as Ofcom's broadband checker, which allows would-be tenants to check the availability of various broadband services by area. Customers require an email address to sign up and a Housing Options Plan is generated. Housing Options offers personal advice to anyone who may need housing advice or assistance and helps customers make informed choices about the appropriate house type/tenure. Customers are also advised of their priority rating for social housing. If this is low or zero, advice on other housing tenure options are provided.

Wheatley Group also offer MySavings, which provides tenants with deals on a wide range of items/services. This is a clear example of how digital access can provide cost savings to customers and how digital inclusion can underpin access to systems and services overall. Wheatley Group complement their innovative services with their own in-house digital skills training and access initiatives, which are provided through their Click & Connect centres.

---

[8] Scottish Housing Network

The implementation of Universal Credit has had an impact upon the city's housing sector. Universal Credit applicants are required to apply for this benefit and manage their claim online. This has resulted in a requirement for increased support from welfare rights advisors particularly in supporting claimants during the application process. Citizen's Advice Scotland has identified the digitisation of welfare benefits as a significant theme underpinning digital exclusion across Glasgow. In addition, the removal of direct benefit payments that were previously received from Housing Benefit has had an adverse impact on rent arrears and the subsequent efforts required to collect rent. Increasing access to services online can assist in allowing tenants to pay their rent and access support to help manage their finances.

Digital platforms provide an opportunity to transform how RSLs operate. Channel shifting can offer an improved service to those tenants in most need and assist in business planning.

RSLs in Glasgow who offer services online highlighted the following benefits that they have experienced:

- Quicker application processing times for the customers;
- Being able to engage with tenants who did not usually engage;
- Online data handling is more secure than paper format;
- Improved business planning; and
- Being able to allocate more staff time to client groups that require greater assistance.

However, there are a range of challenges in switching to digital platforms and RSLs outlined the following:

- Ensuring customers can access online services;
- Limited resources and RSLs not having dedicated teams/staff aligned to develop or support online systems/services; and
- Difficulties in making the shift from traditional methods of service delivery to using new technologies.

The challenges faced by RSLs in Glasgow and their ability to offer services online varies depending on the size of the organisation. RSLs that have a large number of staff are more likely to be able to manage both the up-front costs and resources required to implement new systems. Business modelling can forecast the savings that could be recouped over time following the initial financial and resource investment. Smaller RSLs may not have the staff or financial resources required to switch existing services online. The amount of initial capital investment required may also prevent RSLs from making this change. However, there may be opportunities for RSLs to work in partnership with one another to identify opportunities and deliver online services.

All RSLs in Glasgow have a website, this provides a digital platform upon which additional services can be developed. This provides options for RSLs to offer services online such as managing applications for social housing, accessing housing options and welfare information and engaging with tenants.

Glasgow does not have a Common Housing Register. However, GCC and RSL partners completed a pilot project, which identified that there is scope to develop an online system. Developing a Common Housing Register for Glasgow would allow the city's citizens to apply for housing to multiple RSLs via an online application from to a dedicated website. Currently, those who wish to access social housing in Glasgow must complete application forms to each RSL they wish to be considered for housing with.

Responses received through the digital housing survey show that 94% of RSLs use social media to engage with their tenants. Facebook and Twitter are the most common social media platforms used. Having an active social media presence is effective for communicating key messages, promoting services and conducting satisfaction surveys as well as providing an accessible platform for tenants to engage with RSLs. RSLs in Glasgow provided examples of how social media is used and assists in delivering services including receiving complaints and reports of anti-social behaviour, managing general enquires, promoting services and community events and engaging with tenants and other stakeholders. Social media provides a platform for resolving issues quickly, particularly for smaller RSLs. Functions such as web or live chat are more likely to benefit RSLs with large numbers of tenants.

The Covid-19 pandemic has impacted on how RSLs operate and deliver services in Glasgow. Health and Safety measures, which were implemented in response to the pandemic, resulted in 84% of RSLs adapting how services are delivered. The 16% of RSLs who made little or no change already delivered services online and had a large digital presence prior to the pandemic.

RSLs provided examples of how digital platforms and technology have been used to deliver services in Glasgow:

- Use of online platforms to call and provide support and services to tenants;
- Promoting activities and service delivery via websites and social media channels;
- Allowing for repairs and issues to be reported online;
- Virtual property viewings and digital sign up;
- Provision of wellbeing sessions and social activities virtually; and
- Staff working remotely to deliver services.

RSLs were also keen to highlight the following benefits from switching to digital platforms for both their staff and customers. These benefits include:

- Flexibility for staff with home or hybrid working;
- Increased productivity;
- A decrease in staff absence from work;
- Increase in tenant engagement including typically 'hard to reach' groups;
- Delivery of more services online including housing and community activities; and
- Improvements in linking services.

As a result of the benefits, RSLs advised that many of the changes implemented will remain in place going forward. However, RSLs also highlighted that staff will continue to provide face-to-face contact with tenants in terms of service delivery.

GCC recognises the challenges that are being faced by RSLs in resourcing and implementing systems and services. Case studies, which highlight best practice, will be shared by GCC to RSLs operating in the city.

6.4 Technology

The digital housing strategy survey highlights technologies currently being used by RSLs in Glasgow. Feedback received during the development of the draft DHS shows that during recent years, RSLs have been exploring the use of technology and have implemented a range of different types of technologies.

At the time of the survey:

- 47% of RSLs had a digital strategy in place;
- 31% planned to develop one; and
- 22% did not have one and did not have plans to prepare a strategy.

GCC also asked if RSLs had signed up to the TEC in housing charter. The responses showed that:

- 19% had signed up;
- 28% planned to; and
- 53% had not signed up.

The responses to both these questions highlight that there is scope for RSLs and GCC to work together to investigate if the use of technology to deliver housing services can be increased.

Internet of Things (IoT) technology is becoming increasingly popular across the housing sector and brings a range of benefits to housing providers and tenants alike. IoT is a network of devices or sensors that are linked wirelessly and collect, exchange, analyse and respond to real time data. These sensors can provide data on many factors including temperature, humidity, acoustics, carbon monoxide, smoke, and air quality. The sensors are small and can be installed in a convenient location(s) in a property. Gateways are also required to enable data to be transferred to a server and are usually positioned at the top of block of flats or a house. A gateway can cover 5km2 so multiple devices can access this infrastructure. The data gathered has the potential to monitor stock performance and deliver or inform services associated with health and social care, and safety.

GCC asked RSLs if they have or would be interested in installing real time monitors to measure a range of issues in housing such as humidity and CO_2 levels. Figure 3 outlines a summary of the results from the number of RSLs that responded to the digital housing survey who are interested in installing real time sensors in their housing stock in the future. The majority of RSLs that responded (72%) advised that they would be interested in exploring the use of such technology. However, the responses also highlighted that a key barrier to this is the up-front funding required to implement the technology and ongoing costs of maintenance.

Figure 3 – RSL Interest in Using Real Time Monitoring[5]
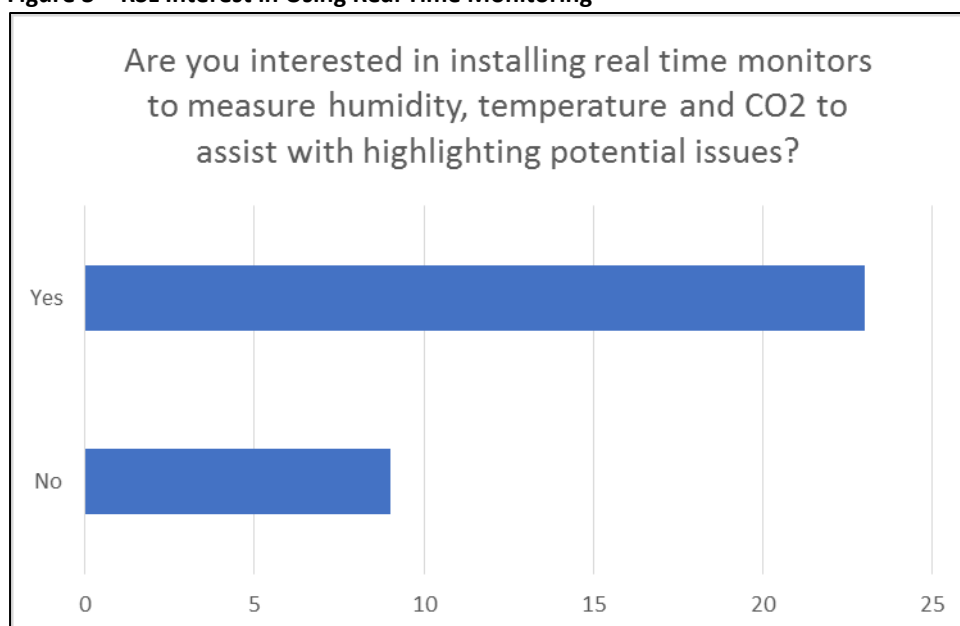
GCC and RSLs are working together to explore the potential role IoT technology can play in delivering a range of benefits for both the affordable housing sector and tenants. The main benefits that the technology can provide include:

- RSLs being able to access real time data about their housing stock;
- Reduce costs for tenants by optimising the energy efficiency of their home;
- Reduce fuel poverty and housing's impact on climate change;
- Provide improvements to health and safety through being able to alert households/RSLs to dangerous levels of carbon monoxide and/or smoke detection and fire safety breaches;
- Improve the delivery of digital services through collecting data on the condition and performance of housing stock. This in turn can inform business planning;
- Provide better customer service and enhance housing standards and condition by pre-emptively carrying out repairs and provide more accurate maintenance schedules; and
- Contribute towards the delivery of health and social care services including supporting households with particular needs to live independently.

Whist there are a range of benefits, the analysis has highlighted that there are challenges associated with delivering IoT technology across Glasgow's affordable housing sector. These include:

- Funding future projects;
- Linking IoT technology with existing software systems that are used by RSLs;
- Ensuring LoRaWAN connectivity;
- Engagement with households;
- Data security; and
- Data management.

RSLs including North Glasgow Homes, New Gorbals Housing Association and Maryhill Housing Association have installed IoT technology in a proportion of their housing stock to measure a range of outcomes. These RSLs have implemented IoT to inform the analysis of housing stock condition, gather data to identify households that were classified as fuel poor and support fire safety measures. The data has been used to identify improvements to housing, services and the living standards of tenants including their health and wellbeing. However, as outlined in Section 6.3, there are at least 10 housing management systems currently in use by RSLs across the city. Interoperability is a key barrier in implementing IoT technology.

Wheatley Group is piloting the use of technology to monitor levels of humidity and temperature in their housing stock. The 'Go Mobile' project has also been implemented by Wheatley Group and this allows staff to use a tablet device whilst working remotely and visiting tenants. This allows staff to schedule appointments, manage cases, progress repairs and provide customer interaction. The device is also linked into a wider system and call centre.

The owner occupation and private rented sectors are more likely to make use of digital technology through the use of smart appliances (smart heating, lighting or home security systems). The 2018 Scottish Household Survey highlights that there is a negative correlation between increased deprivation and the use of smart appliances in the home. The analysis shows that:

- 83% of those living in the most deprived areas of Scotland did not utilise smart technology in their home;
- In the least deprived areas of Scotland, the number of homes without smart technology installed was 66%;
- Only 12% of owner-occupied homes are in the 20% most deprived areas of Scotland; and
- Meanwhile, 47% of socially rented homes are in the most deprived 20% in Scotland, while only 2% are in the least deprived 20%.

Feedback from the private landlord survey showed that 56% of private landlords in Glasgow would consider installing IoT sensors in their properties. The reasons given by those who would not consider it were based on concerns relating to affordability, necessity and privacy. Implementing measures aimed at improving data security and privacy may increase the number of landlords potentially interested in installing the technology going forward.

A range of technologies are used to support RSL tenants such as GCHSCP's Telecare system, Internet of Things technology, voice assistance, inactivity monitors and the provision of free Wi-Fi. There is an element of crossover with some of the systems that are outlined in Section 6.3.

RSLs were asked in the digital housing survey if they used technology to support independent living and 34% of the respondents advised that they did. A summary of the results is outlined in Figure 4.

Figure 4 – Use of Technology to support Independent Living[5]
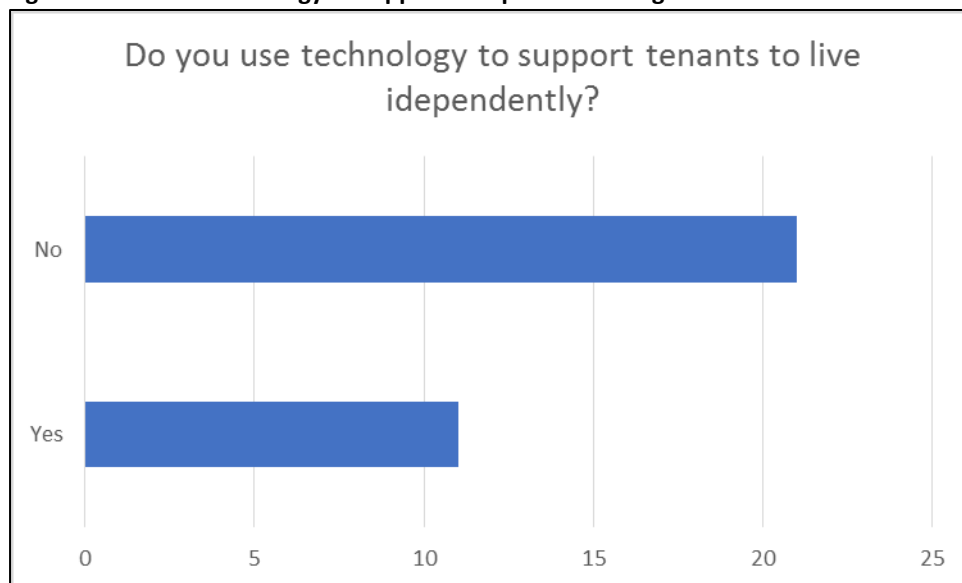
Telecare, which is used by GCHSCP, is a broad range of devices that are designed to help keep people safe in their home and enable for a contact to be alerted if assistance is required in the event of an emergency. The service is mainly used by older people or people with disabilities, however, it can be used to support people who have significant health problems. Telecare consists of an alarm base unit with an inbuilt microphone and users wear a pendant, which allows for the system to be contacted anywhere inside their home.

This technology is used to provide services and support to circa 9,000 people across the city[9]. Whilst the system works well, GCHSCP is planning to migrate all their clients to a digital-based service by 2025. A digital system may allow for other types of care services to be delivered to people across the city.

Blackwood Homes and Care are a housing and care RSL that operate in the city. Technology, known as 'Clever Cogs', has been developed and used by Blackwood Homes and Care to support people to live independently in their own homes. The household can select the cogs (for example home cog relates to activating/deactivating alarm services, opening/closing windows, doors and switching on/off lights) that they require on their tablet device and the technology then processes the request. There are a range of cogs available for tenants to select.

In terms of functionality, the technology provides flexibility and all the data is collected and managed on a single system. Blackwood Homes and Care also use sensor technology to monitor the use of doors, heat and windows. They are in the early stages of examining the use of machine learning, this could improve people's quality of life, in addition to improving the housing and care services that they receive.

Blackwood Homes and Care is also at the frontline of innovation in developing the potentials for technology and independent living. They have secured funding to explore the use of robotics in the delivery of care and support in housing. Universities and manufacturing companies are also involved in developing the three-year project. The purpose of the project is to explore the use of robotics. For example, a robot could be deployed to check on a tenant who has fallen over, which will then raise an alert to care staff/next of kin and provide support until assistance arrives.

Announced in July 2021, Blackwood Homes and Care is leading the development of three "communities of the future". This initiative will be taken forward in GCC, Dundee City Council and Moray Council areas. The "communities of the future" which will be designed as blueprints for age-friendly communities that can be replicated at scale throughout the UK. IoT technology will be used to maintain social connections and build safe and effective outdoor spaces. Partners are currently working closely with the residents and support workers who will ultimately live within these neighbourhoods whilst carefully considering ethics and data privacy. The project aims to use and maintain best practice in this dynamic and ever-developing field.

---

[9] Glasgow City Health and Social Care Partnership

7. Challenges

GCC has worked with partners and identified the following 6 challenges associated with improving the collection and use of data, increasing digital connectivity and enhancing the use of systems, services and technology across the city's housing sector:

1. Reducing levels of digital exclusion;
2. Enhancing digital Infrastructure;
3. Expanding the provision of digital services;
4. Implementing digital housing technologies;
5. Improving the collection, analysis and display of data through digital platforms; and
6. Providing resources and meeting the costs of delivering improved services and implementing technology.

7.1 Reducing Levels of Digital Exclusion

As highlighted within Section 6.2, GCC has worked with partners to identify groups of citizens who, from a housing perspective, are more likely to experience digital exclusion. Having access to an affordable broadband connection is vital and allows households to access a range of key services, interact with people, learn and work.

GCC has also analysed data to understand the reasons why households living in the city are experiencing digital exclusion. The key challenges that GCC and partners need to address are:

- Providing a broadband service that is affordable for low income households;
- Ensuring people of all ages (that do not have the confidence or the required skills) can receive the appropriate support and training that enables them to use the internet; and
- Supporting people to gain access to the appropriate devices.

A key theme that cuts across the challenge of reducing levels of digital exclusion in the city is affordability. It is estimated that 19% of Glasgow's citizens are income deprived compared to 12% of Scotland's population. The SIMD data also shows that 29% of the city's population live in the 10% most deprived areas in Scotland. There is a clear link between household income and internet usage. The cost of paying for broadband services can be unaffordable for low income households.

Improving the skills and confidence of households that cannot, or are reluctant to, use the internet is key to reducing digital exclusion. There are opportunities to build upon the good work undertaken by RSLs to maximise the provision of training for tenants that require support. This will help to reduce social isolation and provides an opportunity for people to learn new skills and access services online.

Finally, not having access to the appropriate technology such as a device also contributes to digital exclusion. The cost of devices including smartphones, tablets, laptops and computers is expensive and can be unaffordable for low income households to purchase.

7.2 Enhancing Digital Infrastructure

Improving the city's digital infrastructure is a key challenge that both GCC and the Scottish Government have identified. There are gaps in the provision of fibre broadband infrastructure across the city.

New housing developed through the Council's Affordable Housing Supply Programme should include ducting, as a minimum, to help future-proof access to internet and broadband services. This assists RSLs in working towards improving digital infrastructure in the city's affordable housing sector. However, the supply of a live broadband connection to homes does not need to be provided as part of the funding requirements at present.

Installing free issue ducting at the time of new build developments allows for multiple telecoms providers to install fibre through the duct to serve housing within the vicinity. This has the potential to expand the choice of fibre providers for households.

It is easier to lay fibre or ducting at the time of constructing homes, however, it can be difficult to retro-fit fibre to homes. It is challenging to install fibre broadband cabling in housing such as pre-1919 tenements that have been constructed using specific building materials. Sandstone properties in Glasgow account for approximately 27% of all property types in the city[10]. Other building materials such as heavy wooden beams, solid fire doors and metal sheeting insulation can also cause internal broadband signalling issues.

7.3 Expanding the Provision of Digital Housing Services

The range of services that are available online to tenants living in the city's affordable housing sector varies considerably. Each RSL decides what services can be provided online to their tenants/communities. There is a proportion of RSLs that either offer a small range of services or none online.

A key part of online service delivery is the IT system that each RSL uses. Systems provide the functionality that is needed for RSL service delivery. The analysis undertaken to inform the development of the draft DHS showed that 50% of RSLs in Glasgow are interested in upgrading their existing IT systems in the future. This indicates that the current functionality may not be meeting their needs and prevent the expansion of offering housing services online.

The Covid-19 pandemic has shown the importance of being able to access services online. RSLs that offer a range of online services including providing tenants with the opportunity to transact online have advised of the benefits this delivers. Tenants' expectations of how services are delivered is changing. Feedback also shows that tenants would like an option to access services online. However, GCC and RSLs recognise that due to the number of households that are digitally excluded, RSLs will need to continue to provide traditional forms of communication and service delivery for their tenants who cannot access online services.

---

[10] Glasgow City Council Neighbourhoods, Regeneration and Sustainability

GCC and RSL partners have been working together to develop a Common Housing Register (CHR) for the city. Glasgow's pilot CHR, The Glasgow Housing Register (GHR) was launched in April 2017 in partnership with 14 RSLs operating the north west of the city. During a period of 8 months, housing applicants wishing to apply for affordable housing in the north west of the city could do so via an online application and their housing application would be considered by all RSLs they selected. A decision was made in December 2017 to suspend Housing applications received via the GHR. As no commonality in housing priority was agreed by GHR partners, there was duplication in assessing housing applications, which led to volumes becoming unmanageable.

A CHR is crucial in improving access to affordable housing. It would provide an online a platform to allow RSL partners to offer services through as well as providing much needed housing need and demand data, which is critical for both GCC and RSL partners to ensure that we can deliver the correct types and number of affordable homes across our communities. Although the GHR is currently inactive, GCC has maintained a relationship with Home Connections, the GHR software provider and is discussing options for re-launching the project. Improving online access to affordable housing is a key challenge.

Cyberattacks pose a threat to all businesses that offer online services. RSLs need to ensure that their systems and online services have the appropriate security and that the data is suitably protected.

It is important to ensure that staff receive training to ensure they can maximise opportunities to deliver and manage services online.

7.4 Implementing Digital Housing Technologies

There is a range of technology available that could assist in managing assets, providing services and supporting tenants. Meeting the costs of implementing new technology in housing is a major challenge for RSLs and private landlords. Feedback from RSLs has outlined that some would be hesitant in progressing the implementation of new technology due to the costs and potential impact on capital budgets. It is important that the introduction of new technology demonstrates value for money. There is also an appreciation that there is likely to be a period of disruption to service delivery whilst technology is implemented.

RSLs advised that a key challenge with implementing new digital technology is understanding what technology is available. Complex technology may be difficult to use, and it can also take time to understand, use and develop outputs. Therefore, careful planning is required when exploring potential technologies.

As with all technology, staff and tenants would have to learn the required skills to be able to use it. Engagement can assist in identifying the needs of both tenants and staff and how technology is used.

Tenants may be reluctant to have technology installed in their homes, which presents as a barrier to implementing technological solutions and subsequently improving services. Therefore, an engagement strategy should be developed to ensure tenants understand what the technology is, how it works, the benefits and other key considerations.

The implementation of technology is also likely to require tenants to have access to a suitable broadband speed and an appropriate device to use. Therefore, the challenges that have been identified for reducing the number of households that are digitally excluded also apply to the implementation of digital technology.

In terms of data, there may be a cost attached to commissioning a supplier that would analyse the outputs generated by the technology. RSLs highlighted that managing the volumes of data generated through IoT technology can be an issue. Additional resources, whether it be staff or consultants, are therefore required to interpret the data. Monitoring the outputs generated by technology is important and assists in establishing how it is being used and to measure performance.

7.5 Improving the Collection, Analysis and Display of Data through Digital Platforms

Due to the nature of their operations, RSLs collect and have access to a wide range of data. The size and use of datasets by each RSL vary across the city. Feedback received from RSLs during the development of the draft DHS outlined that there is scope to improve the collection and analysis of data.   However, due to the number of RSLs operating in the city, it is challenging to gain an understanding of the datasets that are collected and used to inform service delivery and business plans.

RSLs complete data returns annually to the Scottish Housing Regulator. The returns outline data relating to a range of areas including an overview of satisfaction levels from tenants and quantitative data relating to housing management operations and other sets. This provides a consistent dataset that can be used to inform strategies and other key housing plans. There may be scope to develop a housing data management system using a digital platform, which could be used by RSLs. This system could be developed as part of a CHR for the city. However, due to the variation in systems and data that is collected by RSLs, there is likely to be challenges in delivering consistency.

As outlined in the description of other challenges, RSLs need to apply the appropriate measures to ensure that data is secure. Maintaining the security of data that is held digitally is an ongoing action that RSLs are required to monitor closely to ensure that cyberthreats are managed and minimised.

7.6 Providing Resources and Meeting the Costs of Delivering Improved Services and Implementing Technology

An overarching challenge is the ability of RSLs to provide the required financial and staff resources to support the delivery of improved digital services and implementation of new technology. The process of implementing new systems and technologies can be costly and resource intensive. For large RSLs, the benefits of implementing new technology is more likely to out-weigh the challenges. However, a proportion of smaller RSLs advised that the cost of implementing new systems and technologies is not viable. Smaller RSLs may not have a dedicated IT staff resource to progress the implementation of new digital services and/or technology. However, RSLs have strong partnerships in place across the city and such networks could be explored to promote information sharing and address issues relating to resources.

8. Digital Housing Priorities

GCC has prepared 6 priorities, which have been developed through considering the analysis undertaken in preparing this strategy and examining the 4 themes and identified challenges.

The priorities are focussed on housing and digital. However, these priorities should be considered in line with the aims outlined in Glasgow's Housing Strategy. The draft DHS priorities include:

1. Expanding the range of housing services that are available online;
2. Reducing the number of households living in Glasgow that are digitally excluded;
3. Enhancing the collection, analysis and display of data using digital systems;
4. Delivering effective partnership working to implement digital technology, improve connectivity. and online services that will improve the lives of Glasgow's citizens;
5. Contributing towards reducing levels of deprivation; and
6. Promoting health and wellbeing.

The priorities have been considered and used to inform the actions that are outlined in Section 9.

9. Action Plan

GCC has developed an action plan in response to the challenges and priorities that have been identified in this strategy. Progress to implement the actions will be monitored by GCC and the data gathered to inform the development of the draft DHS will be used as a baseline. The plan includes target timescales for implementing the actions, which are:

- Short term – within 1-3 years
- Medium term – within a 3-5 years
- Long term – 5 + years

Action	Draft DHS Priorities	Target	Delivery Period	Key Partners	Related Draft DHS Challenges
Continue to work with partners to reduce levels of digital exclusion through providing training, affordable broadband and/or technology	2, 4, 5 and 6	Increase the number of people who can access affordable broadband and use the internet from their home	1-3 years	GCC/RSLs/Private Sector/Third Sector	1 and 2
Work with partners to increase affordable fibre broadband connectivity to existing properties and new build homes	2, 4, 5 and 6	Increase the number of homes with access to an affordable fibre broadband connection	5 + years	GCC/RSLs/Private Sector Housing (Landlords/Owner Occupiers)	1 and 2
Develop a Digital Housing Guide that outlines best practice relating to promoting digital inclusion, implementing new systems and online services, technology and collecting/managing data	1, 2, 3, 4, 5 and 6	Improve information sharing, highlight examples of good practice that will support the delivery actions in the draft DHS	1-3 years	GCC/RSLs	1, 2, 3, 4 and 5
Develop a Digital Common Housing Register for Glasgow	1, 3, and 4	Develop an online system in partnership with RSLs that improves access to housing, data collection and delivery of online services	1-3 years	GCC/RSLs	3, 5, 6
Explore the potential of developing a Digital Housing Data Framework with RSL partners	3 and 4	Create an online data system that allows GCC and RSLs to record and analyse data	3-5 years	GCC/RSLs	5
Establish a Digital Housing Working Group	1,2, 3, 4, 5 and 6	Create a group that allows RSLs to share information and develop digital housing projects	1-3 years	GCC/RSLs	1, 2, 3, 4, 5 and 6
Investigate the potential to implement technology that will improve the housing conditions, health of our citizens and deliver services including supporting independent living	4, 5 and 6	Identify and implement technology that can assist in improving the condition of housing and peoples' lives in the city.	3-5 years	GCC/RSLs/GCHSCP	3 and 4
Expand the provision of online housing services for all RSLs tenants	1 and 4	Enhance the existing level of housing services that are provided online	3-5 years	GCC/RSLs	3

Explore opportunities to secure funding to deliver actions outlined in the draft DHS Action Plan	1, 2, 3, 4, 5 and 6	Investigate potential funding sources that GCC and partners could apply for to deliver the actions outlined in the draft DHS.	Ongoing	GCC/RSLs/GCHSCP	6
Facilitate partnership working that will support RSLs to improve digital systems, services, use of technology and collection of data	1, 2, and 4	Develop partnerships across Glasgow's affordable housing sector that allow RSLs to improve digital systems, services, the use of technology and data gathering.	1-3 years	GCC/RSLs	1,2, 3, 4, 5 and 6